

Appendix C: Job Hazard Analysis for the Klamath Network Vegetation Monitoring Protocol

Version 1.00 (March 2010)

The Klamath Network will make every effort to comply with the NPSafe program and with local park safety programs. The Network takes safety seriously, and it is the number one priority when developing and implementing these protocols. Crews are expected to be trained on all safety aspects of this project prior to entering the field.

The vision of the NPSafe program is:

“The NPS is widely recognized for providing world-class resource stewardship and visitor experiences. Just as the NPS excels at protecting natural and cultural resources and serving park visitors, the NPS can excel in providing our employees with a safe work environment. All employees deserve the opportunity to do their jobs safely and effectively so they can go home healthy at the end of the day to fully enjoy their lives and families.”

The beliefs of the NPSafe program are:

- We believe that healthy, productive employees are our most important resource, and employee safety is our most important value.
- Injuries and occupational illnesses are unacceptable and all are preventable.
- At risk behaviors can be eliminated.
- Operating hazards and risks can be controlled.
- Safety is everyone’s responsibility.
- Managing for safety excellence can enhance employee productivity, save millions of dollars in workers compensation costs, and improve overall management effectiveness.

The goals of the NPSafe program are:

- 1) The NPS becomes the safest place to work in DOI.
- 2) Safety is integrated into all NPS activities.
- 3) The NPS organizational culture values employee safety as much as it values protecting resources and serving visitors.
- 4) Employees, supervisors, and managers demonstrate unwavering commitment to continuous improvement in employee health and safety.

To meet these goals, the Klamath Network has included several Job Hazard Analyses (JHA) in this appendix that should be followed while implementing this protocol.

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		Date: 1/21/2010	
Park Unit: KLMN	Division: IMD	Branch: NRPC	Location: Ashland, Oregon
Task Title: Driving vehicles in the course of one's job		JHA Number: KLMN JHA 1	Page: 1 of 3
Job Performed By: ALL	Analysis By: Daniel Sarr	Supervisor: Daniel Sarr	Approved By: Daniel Sarr
Required Standards and General Notes:	Employees driving as part of their duties must have a valid state issued driver's license.		
Required Training:	Standard drivers training. Also need to know how to change tires and jump start vehicle.		
Required Personal Protective Equipment:	Seatbelts must be used.		
Tools and Equipment:	Vehicle		
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Starting vehicle, basic operation	<ul style="list-style-type: none"> • Lights not functioning, visibility impaired • Low tire pressure • Low fluid levels • Spare tire not in vehicle or deflated • Low gas 	<ul style="list-style-type: none"> • Test headlights, turn signals, brake lights, breaks, tire pressure and all fluids • Check status of spare; insure that jack, properly sized lug wrench and all necessary tools are present in vehicle • Check gas 	
Using 4 wheel drive, if applicable.	<ul style="list-style-type: none"> • Not knowing how to engage, getting stuck in the field • Unsafe driving procedures due to perceived safety of 4 wheel drive 	<ul style="list-style-type: none"> • Practice engaging 4 wheel drive • Engage 4 wheel drive prior to rough conditions • Use 4 wheel drive when increased traction is necessary; e.g., steep slopes, slick conditions, snow • Even in 4 wheel drive, do not assume safety is enhanced. Use cautious and defensive driving practices. 	
Driving in reverse	<ul style="list-style-type: none"> • Hitting objects, people, wildlife 	<ul style="list-style-type: none"> • Check area behind vehicle prior to leaving site • Use a person outside the vehicle (other crew member) to direct traffic • Back into parking spots, so leaving sites after long field day is easier and less likely to result in fatigue related mishap 	

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		JHA Number: KLMN JHA 1	Page: 2 of 3
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Transporting gear and heavy equipment	<ul style="list-style-type: none"> • Gear flying around, hitting driver and passenger in accident • Damage to gear during turns or stops 	<ul style="list-style-type: none"> • Ensure that gear is adequately stowed. • If the gear comes with protective gear (e.g., electrofisher), properly stow in container. • Do not put gear on top of vehicle; stow inside. 	
Passenger/driver safety	<ul style="list-style-type: none"> • Distracted driving • Driving on narrow, single lane roads with bumpy or “washboard” surfaces. • Driving with limited visibility, as in heavy rain, fog, or dust. 	<ul style="list-style-type: none"> • Wear seatbelts at all times while driving. • Practice safe and defensive driving habits. • Obey traffic laws. • Do not text. Pull over and stop to use phone. • Keep windshields clean. • Drive with both hands on the wheel at 10 o’clock and 2 o’clock. • Do not pick up hitch hikers. • Use turn signals/indicators. • Plan route in advance. • Make sure seat and mirrors are properly adjusted for driver • Use headlights, even during day time driving. • Maintain a safe speed (this may be below the legal limit). • Stay to the right, especially on curves, and be aware for oncoming traffic. • If turning around, “face the danger,” in other words, turn towards a steep slope, instead of backing into a steep slope cliff. • Slow down. • If possible, wait for conditions to improve. • Drive with lights on. In some conditions, low lights may penetrate better than brights. 	

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		JHA Number: KLMN JHA 1	Page: 3 of 3
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Passenger/driver safety	<ul style="list-style-type: none">• Fatigue driving• Storm conditions (snow, mud, wind)• Road obstacles	<ul style="list-style-type: none">• Be aware of signs of fatigue. Pull over and catnap if necessary, eat a snack, or have a partner drive. If in doubt, do not drive.• Keep informed of the weather.• If excess wind (tree top swaying, twigs falling) consider postponing trip.• Avoid wet clay roads as much as possible.• Get out and move rocks in the road as necessary. If large amounts of rockfall or trees, report to the park staff.• If you hit rocks, stop and check tire conditions (wear, sidewall, and inflation) for damage.• If obstacle is an animal, slow down! Be aware of high animal traffic areas and drive appropriately. It is better to “ride out” an impact than suddenly swerve. This is true for animals of all sizes, from squirrels to cattle.	
Working/Parking on or near a roadside	<ul style="list-style-type: none">•Being hit by a car	<ul style="list-style-type: none">• Stay off of the road.• Use pullouts or secondary road when parking.• Be aware of the traffic.• Walk on the side of the road facing traffic.• Always set out safety triangles or flares behind the vehicle before starting any maintenance.• Never go under the vehicle while it is up on a jack.	
Working/Parking on or near a roadside	<ul style="list-style-type: none">•Running into objects, parking too far off the road, getting stuck, rolling vehicle	<ul style="list-style-type: none">• Park on stable surface.• Don't park on a blind corner or a solid striped road area.• Set parking break.	
Description of Task When it is Done Safely			
Crew returns safe from the field day/season, with no injuries, damages, or law suit.			

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		Date: 1/21/2010	
Park Unit: KLMN	Division: IMD	Branch: NRPC	Location: Ashland, Oregon
Task Title: Remote field site access/ trail travel/ cross-country travel		JHA Number: KLMN JHA 2	Page: 1 of 3
Job Performed By: ALL	Analysis By: Daniel Sarr	Supervisor: Daniel Sarr	Approved By: Daniel Sarr
Required Standards and General Notes:	Crew members should be physically fit		
Required Training:	None required.		
Required Personal Protective Equipment:	Footwear appropriate to terrain (probably hiking boots); pants if hiking through brush or poison oak; Tecnu poison oak pre-exposure lotion, park radio with charged batteries, GPS units, eyewear, first aid kit.		
Tools and Equipment:			
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Hiking on and off trails	<ul style="list-style-type: none"> • Getting lost • Physical injury (e.g., twisted ankle, broken bones) • Getting hit with tool, implement, or vegetation branch 	<ul style="list-style-type: none"> • Use and be trained in navigation techniques using both maps and GPS units. • Allow ample time to access site and return. • Bring safety gear (e.g., radio); extra clothes, water, food, etc. • Look at notes from crews that previously accessed this site. • Wear appropriate footwear, preferably boots with vibram soles and tops above the ankle, broken in prior to field season. • Walk cautiously and don't run. • Take breather breaks as necessary. • Stay physically fit. • Know basic first aid. • Be trained in radio SOP. • Avoid talus slopes. On steep slopes, avoid walking directly below others. • Take care walking on wet or slippery ground, especially bridges. • Maintain 6 foot spacing • Warn people behind of "snap-back" from vegetation branches; wear safety glasses (or other glasses). 	

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		JHA Number: KLMN JHA 2	Page: 2 of 3
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Hiking on and off trails	<ul style="list-style-type: none"> • Blisters • Carrying heavy loads • Loose footing; falls, broken bones, etc. • Branches and trees, other dangerous obstacles 	<ul style="list-style-type: none"> • Wear broken in and proper fitting boots. • Bring moleskin and use if blisters develop. • Use backpack appropriate to load; do not carry heavy items in arms or hands; make hands available to break a fall. • Properly fit backpack. • Use crew member to assist in putting pack on. • Be physically fit. • Report problems or issues to supervisor. • Stay hydrated. • Avoid steep slopes. • If unavoidable, walk at angle up slope; not straight up. • Wear good boots. • Do not go up hazardous slopes. • Watch for branches, wet, slick rocks, etc. Avoid as necessary. • Take your time, ascending and descending. • Plan your route so that hazardous terrain is minimized and the use of trails is maximized. • Do not travel alone (e.g., if one crew member is faster, only travel as fast as your slowest person). • Examine for the safest way around. • Do not jump off trees. • Avoid going underneath large trees that could shift and crush a person. 	

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		JHA Number: KLMN JHA 2	Page: 3 of 3
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Wildfires	<ul style="list-style-type: none">Exposure to smoke and fire	<ul style="list-style-type: none">Don’t panic. Be alert. Keep calm. Think clearly & act decisively. Get out of the area immediately.Maintain communication with other crew members and with dispatch. Follow local district policies regarding reporting fire.	
Water Crossing	<ul style="list-style-type: none">Loose footing; falls, broken bones, etc.	<ul style="list-style-type: none">Choose stream crossing routes by scouting the area firstAvoid crossing when water levels are higher than knee height. Avoid crossing on logs whenever possible.Use a stick or pole to secure footing. Place it upstream at a slight angle. Use pole to test for depth & walk to the pole.Stay out of areas with swift current, especially after heavy snowfall, rain, or spring melt.Use footwear with non-slip soles while walking in streams. Do not wear sandals in streams.When possible, step on streambed proper instead of the tops of boulders that may be slippery.	
Description of Task When it is Done Safely			
Crew returns safe from the field day/season, with no injuries, damages, or law suit.			

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		Date: 1/21/2010	
Park Unit: KLMN	Division: IMD	Branch: NRPC	Location: Ashland, Oregon
Task Title: Environmental Exposure		JHA Number: KLMN JHA 3	Page: 1 of 3
Job Performed By: ALL	Analysis By: Daniel Sarr	Supervisor: Daniel Sarr	Approved By: Daniel Sarr
Required Standards and General Notes:	Field crew members in the field are expected to use common sense in dealing with exposure to elements or wildlife. Ideally, they have experience in outdoor work prior to initiating the field season.		
Required Training:	None required.		
Required Personal Protective Equipment:	Appropriate clothing for conditions.		
Tools and Equipment:			
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Being outdoors, far from facilities for long time periods	<ul style="list-style-type: none"> • Hypothermia • heat exhaustion; heat stroke 	<ul style="list-style-type: none"> • Consult First Aid book for treatment. • Seek assistance. • Recognize the signs: Shivering; Numbness; Drowsiness; Muscle Weakness; Dizziness; Nausea; Unconsciousness; Low, weak pulse; Large pupils. • Practice prevention: stay dry; wear appropriate clothing; cotton kills; wear layers, shed layers as needed (don't overheat as sweat can cause hypothermia); watch or listen to the weather forecast, and plan accordingly; stay hydrated, cover head with warm clothing, stay active. • Be aware of the role that wind-chill can play in hypothermia; under certain conditions, hypothermia can occur without any rain or being wet. • Consult First Aid book for treatment but generally get the victim to cooler conditions. NOTE: HEAT STROKE IS A LIFE THREATENING CONDITION. • Recognize signs: above normal body temps; headaches, nausea, cramping, fainting, increased heart rate, pale and clammy skin, heavy sweating, etc. • Practice prevention: Stay hydrated: in the midst of the summer, it may be necessary to drink 1 liter of water per hour; wear a broad brimmed hat; take rest stops in shade. • Reschedule work day to do hot, heavy work in cooler hours of the day, or during cooler weather 	

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		JHA Number: KLMN JHA 3	Page: 2 of 3
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Being outdoors, far from facilities for long time periods	• Electrical Storms – lightning	<ul style="list-style-type: none"> • Watch the sky for signs of thunderstorms and seek shelter before the weather deteriorates. • Stop work in streams and lakes. • If caught in electrical storms, seek shelter inside a vehicle or building; keep away from doors and windows, plugged in appliances, and metal. Avoid contact with metal objects in vehicles. 	
	• Electrical Storms – lightning	<ul style="list-style-type: none"> • Do not use telephones. • If outside with no shelter, do not congregate. In case of lightning strike, someone must be able to begin revival techniques (e.g., CPR). • Do not use metal objects. • Avoid standing near isolated trees. • Seek lower elevations such as valleys or canyons; avoid being on peaks and trees. • If you feel your hair standing on end and your skin tingling, this is a sign that lightning might be about to strike – crouch immediately (feet together, hands on knees). 	
	• Sunburn	<ul style="list-style-type: none"> • The risk of sunburn is higher when working at high elevations, or when working around water (from reflection). In these conditions, you can be burned even in overcast conditions. • Wear protective clothing and use sunscreen. 	
	• High wind events	<ul style="list-style-type: none"> • Severe wind events can create “windthrows” where strong winds can blow down trees, causing hazardous conditions to field personnel. Crews should avoid areas during high wind, exhibiting obvious previous wind damage. 	

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		JHA Number: KLMN JHA 3	Page: 3 of 3
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
	<ul style="list-style-type: none">Altitude sickness	<ul style="list-style-type: none">Know and recognize signs of “acute mountain sickness:” headaches; light-headedness; unable to catch your breath; nausea; vomiting.Practice prevention: acclimate to high elevations slowly and stay hydrated.If symptoms progress and include: difficulty breathing, chest pain, confusion, decreased consciousness or loss of balance, descend to lower elevations immediately and seek medical attention.	
	<ul style="list-style-type: none">Giardia	<ul style="list-style-type: none">Treat, filter, or boil all drinking water. Do not drink untreated water from streams, lakes, or springs.	
Description of Task When it is Done Safely			
Crew returns safe from the field day/season, with no injuries, damages, or law suit.			

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		Date: 1/21/2010	
Park Unit: KLMN	Division: IMD	Branch: NRPC	Location: Ashland, Oregon
Task Title: Wildlife and Botanical Exposure		JHA Number: KLMN JHA 4	Page: 1 of 3
Job Performed By: ALL	Analysis By: Daniel Sarr	Supervisor: Daniel Sarr	Approved By: Daniel Sarr
Required Standards and General Notes:	Field crew members in the field are expected to use common sense in dealing with exposure to elements or wildlife. Ideally, they have experience in outdoor work prior to initiating the field season.		
Required Training:	None required.		
Required Personal Protective Equipment:	Appropriate clothing for conditions.		
Tools and Equipment:			
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Driving to the site	<ul style="list-style-type: none"> • Animal in the road 	<ul style="list-style-type: none"> • Slow down! Be aware of high animal traffic areas and drive appropriately. It is better to "ride out" an impact, rather than a sudden swerve. This is true for animals of all sizes, from squirrels to cattle. 	
Being in the field	<ul style="list-style-type: none"> • Rattlesnakes • Bears 	<ul style="list-style-type: none"> • Be alert • Do not put your feet or hands where you cannot see • Do not pick up rattlesnakes • Give a wide berth • Avoid stepping over logs, when you cannot see the other side • If bitten, seek immediate professional medical attention if possible send someone for aid. • Lower bitten extremity below your heart, cover wound with sterile bandage while en route to medical attention. • Be alert and stay calm. • If you encounter a bear, give it as much room as possible. • Try to leave the area but DO NOT RUN. Back away slowly, but if the bear follows, stop and hold your ground. • Wave your arms, make yourself look big, and talk in a normal voice • If the bear makes contact, surrender! Fall to the ground and play dead. Typically, a bear will break off its attack once it feels the threat has been eliminated. If the bear continues to bite after you assume a defensive posture, the attack is predatory and you should fight back vigorously. 	

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		JHA Number: KLMN JHA 4	Page: 2 of 3
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Being in the field	<ul style="list-style-type: none"> • Mountain Lions • Ticks • Roughskin newts (<i>Taricha granulosa</i>) • Insect Sting 	<ul style="list-style-type: none"> • Be alert, calm, and do not panic. • If you see a mountain lion, do not run; you may stimulate its predatory nature. Shout and wave arms to let it know that you are not prey. FIGHT BACK. • Use DEET based repellants on exposed skin. • Check for ticks during and after field work. • Remove with tweezers within 24 hours, preferably immediately. • DO NOT leave the head imbedded. • DO NOT extract with matches, petroleum jelly, or other coatings (e.g., motor oil). • Avoid handling Roughskin newts; their skin contains a potent neurotoxin. If necessary for the protocol, handle only when wearing gloves. Do not “lick” for “killer buzz.” People have died from attempting to eat roughskin newts. • Do not provoke insects by swatting at them. Remain calm and move away from the area. • Be alert for buzzing insects both on the ground and in the air. Walk around any nests you encounter. Inform others of nests. • Flag if necessary. Wear long sleeved shirt and pants. Tuck in shirt. Wear bright colors. Perfumes & metal objects may attract bees. • If stung, scrape stinger off skin. Cold can bring relief. Do not use tweezers. Tweezers can squeeze venom sac and worsen injury. • If you are allergic, carry an unexpired doctor prescribed bee sting kit (EpiPen) with you at all times. • Know the allergic reactions of co-workers as well as the location of the bee sting kit. If victim develops hives, asthmatic breathing, tissue swelling, or a drop in blood pressure, seek medical help immediately. Give victim antihistamine (Benadryl or chol-amine tabs). Use EpiPen. • Prevent bug/mosquito bites by using repellent. Spray on clothing to avoid prolonged exposure to skin. Wear long sleeved shirts and pants. • Be aware of insect transmitted diseases (West Nile Virus, Lyme Disease, Plague). 	

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		JHA Number: KLMN JHA 4	Page: 3 of 3
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Being in the field	<ul style="list-style-type: none">• Rabies	<ul style="list-style-type: none">• Be aware of animals acting strangely. If bitten by a wild or domestic animal get medical attention and report to local health authorities or animal control officer. Locate animal if possible. Follow accident procedures for animal bites.	
Encountering irrigation pipes, marijuana plantation, or grow operations.	<ul style="list-style-type: none">• Unfriendly encounters with criminal elements	<ul style="list-style-type: none">• Do not wear uniforms.• Carry radio in backpack, not visible.• Act like tourists (i.e., act unsuspicious).• Work in pairs or larger groups.• If working in areas likely to contain operations, check in with park staff when leaving vehicle and returning to vehicle.• Do not confront strangers.• Watch for suspicious vehicles and people and report to rangers.• Watch for black piping or other signs.• If finding a definite grow operation, LEAVE IMMEDIATELY, note location, and report to park ranger.	
Travel, movement or work in area with Poison Oak	<ul style="list-style-type: none">• Allergic reaction to poison oak plants	<ul style="list-style-type: none">• Learn to recognize Poison Oak.• Avoid contact and wear long pants and long-sleeve shirts if travelling in dense areas.• If skin contact is made, flush with cold water as soon as possible.• DO NOT flush with warm water or use soap. This can open your pores and increase the reaction.• Use Tec-nu or similar product to wash and rinse with cold water to remove oils (follow label instructions).	
Description of Task When it is Done Safely			
Crew returns safe from the field day/season, with no injuries, damages, or law suit.			

Appendix C. Job Hazard Analysis (continued).

JOB HAZARD ANALYSIS (JHA)		Date: 1/21/2010	
Park Unit: KLMN	Division: IMD	Branch: NRPC	Location: Ashland, Oregon
Task Title: Communication		JHA Number: KLMN JHA 5	Page: 1 of 2
Job Performed By: ALL	Analysis By: Daniel Sarr	Supervisor: Daniel Sarr	Approved By: Daniel Sarr
Required Standards and General Notes:			
Required Training:	Radio / Spot use		
Required Personal Prospective Equipment:			
Tools and Equipment:	Professional Grade Radio, SPOT Monitoring System		
Sequence of Job Steps	Potential Hazards	Safe Action or Procedure	
Radio communication	<ul style="list-style-type: none"> • Communication not possible 	<ul style="list-style-type: none"> • Make sure radio is working before you leave the office or field station. Make sure batteries are changed. Carry a second rechargeable battery as back up. • Check in mornings and evenings. If in a dead zone, try to check in from a better location throughout the day. Be prepared to relay messages in an emergency. If you are working alone, be sure to check in and out with dispatch. • Make sure that your supervisor knows your planned itinerary before you leave in case your radio fails. Follow crew-specific safety check in/checkout procedures. • Know which radio frequencies to use and which to monitor. Know who to call in case of an emergency. Know how to reach repeaters. • Carry a list of employee call numbers. Be prepared to relay messages in an emergency. • Keep messages short, less than 30 seconds per transmission. If a longer message is necessary, break every 30 seconds. • Conserve batteries. Carry a spare and don't leave scanner on. Turn radio off over night. Your life may depend on it. 	
Spot System	<ul style="list-style-type: none"> • Communication not possible 	<ul style="list-style-type: none"> • Make sure system is working before you leave the office or field station. Make sure batteries are changed. Carry a second rechargeable battery as back up. • Make sure that your supervisor knows your planned itinerary before you leave in case your system fails. Follow crew specific safety check in/checkout procedures. • Make certain system is setup properly and includes an accurate contact list. 	
Description of Task When it is Done Safely			
Crew returns safe from the field day/season, with no injuries, damages, or law suit.			